Course Description

In this course, you will learn many of the cardinal principles and techniques of crime scene investigation. The necessity of a rigorous scientific approach will be stressed. Students will be introduced to:

- Documentation with notes, sketches, and photography
- Specialized techniques for the recognition and enhancement of physical evidence
- Preparation and maintenance of case folders for records including notes, sketches, photographs, and contacts/communications
- Communication of results and preparation reports
- Management of scenes and available resources including equipment and personnel
- Ethics and bias in crime scene investigation and criminalistics

The primary aim of the course is to introduce students to scientific philosophy, integrity, scene investigation procedures and techniques, criminalistics, and the role of the criminalist in crime scene investigations.

Required References


Supplemental Reference


Additional Reading

Additional readings are required. Refer to Additional Assigned References (page 5) for the reference list.
General Course Information

Enrollment Requirements:
- Graduate students: FRNSC-MPS program
- Undergraduate students: FRNSC major, FRNSC 210, and either STAT 250 or STAT 200

Other Required Materials:
- Access/knowledge of CANVAS, Internet, and World Wide Web
- Nonprogrammable calculator without memory

Course Syllabus Modifications:
- Changes to this syllabus may be made as deemed appropriate by the instructor. Students will be notified of changes in writing or by e-mail.
- Changes to the syllabus, class schedule, announcements, etc., will be communicated in class and/or via CANVAS/e-mail.
- Students are REQUIRED to check their Penn State and CANVAS e-mail daily.

Information Literacy:
Students will recognize when research is required and will have the ability to access, analyze, integrate, and evaluate information from a variety of sources. These sources include, but are not limited to, Penn State library databases, published and other written materials, and computer sources (Internet, World Wide Web, databases, etc.).

Expected Course and Classroom Behavior:
- Students are expected to be actively involved in their acquisition of knowledge. Every student is responsible for all assigned reading, material presented in lecture, and computer-assisted and delivered instructional material.
- All students are expected to behave ethically and with honor and integrity (refer to Academic Integrity Policy).
- Cell phones MUST BE SILENCED AT ALL TIMES during class and examinations.
- During class (unless previously discussed with the lecture instructor) the use of phones/wearable electronics is prohibited.
- Behavior deemed as disruptive to the instructor or fellow students (i.e., cell phone use, texting, excessive chatting, etc.) may result in the student being asked to leave the classroom. If you are asked to leave the classroom, you will be counted as absent for the entire class. If the behavior continues, the instructor has the right to ask that the student be removed from the course.

Attendance Considerations (refer to Attendance Policy):
- The instructor reserves the right to require written documentation of any event(s) leading to missed lectures, quizzes, and examinations (funerals, hospitalization, physician's office visit, etc.).
- If a student is absent from a lecture, they will be responsible for all content that has been covered on that day. This includes lecture content, announcements, assignments, and any other material distributed to the class. The student is also responsible to be prepared for the next class meeting.

Examination and In-Class Assignment Requirements:
- Cell phones must be silenced and not on the person during quizzes or examinations.
- No electronic/wearable devices are allowed during quizzes or examinations.
- No food or drink items are allowed in the testing room during quizzes or examinations.
- No head coverings (hats, etc.) are permitted to be worn during quizzes or examinations.
- If a student misses a quiz, examination, or in-class assignment:
  - The student must e-mail the course instructor within 24 hours of the absence with a plan for completing the missed course assessment or assignment. If emergent circumstances prevent e-mail correspondence within 24 hours, the instructor must be notified as soon as possible.
  - Documentation of the event must be provided to the course instructor and a plan for completing the missed assessment or assignment must be implemented by the student.
  - If a quiz or examination is missed, it must be completed before the next class session. If emergent circumstances prevent a make-up before the next class session, the instructor must be notified as soon as possible.
  - It is the instructor's prerogative to administer an alternative format examination for any make-up examination.
- Additional requirements/instructions may be given at the start of an examination or in-class assignment.

Other Assessment Requirements:
- Students are responsible for keeping a back-up copy of all submitted work (problem sets, papers, etc.).
- All assessments are due on the date and time specified unless otherwise determined by the instructor (refer to Late Submission Policy).
- Additional requirements/instructions may be given at the time an assessment is assigned.

Duplication, Distribution, and Copyright of Course Materials:
- Students are not permitted to record lectures or any parts of lectures (photography, videography, or any other type of image capture or live recording).
- Students are not permitted to distribute or share any information from this course with others who are not enrolled in the course.
- Students are prohibited from posting any course information electronically without the permission of the instructor; this includes online note-taking/note-sharing services (refer to Penn State Administrative Policy AD-40).
- Violations will result in disciplinary sanctions.

Penn State CSI
Assessment of Knowledge and Skills

<table>
<thead>
<tr>
<th>ASSESSMENT METHOD</th>
<th>ASSIGNMENT WEIGHT</th>
<th>FINAL WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL COURSE SCORE</td>
<td></td>
<td>100.00%</td>
</tr>
<tr>
<td>Problem Sets (×4)</td>
<td>6.00%</td>
<td>24.00%</td>
</tr>
<tr>
<td>Ethics exercise/discussion</td>
<td>3.00%</td>
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<tr>
<td>Quiz</td>
<td>4.00%</td>
<td>4.00%</td>
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<tr>
<td>Midterm Examinations (×2)</td>
<td>26.00%</td>
<td>52.00%</td>
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<tr>
<td>Final Examination</td>
<td>17.00%</td>
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</table>

Additional Grading Considerations

- **Assignment Submission**
  - Late submissions will NOT be accepted.
  - Extensions will be granted for exigent circumstances (documentation may be requested).

- **Attendance Policy**: Students are expected to attend every lecture (refer to University Faculty Senate Policy 42-27: Class Attendance for further information). Recurrent attendance issues will result in a deduction from the final course score.
  - Two (2) unexcused absences: 10% deduction
  - Three (3) unexcused absences: 25% deduction
  - Four (4) unexcused absences: 40% deduction
  - NOTE: Two (2) late arrivals equal one (1) unexcused absence

Grading Scale

<table>
<thead>
<tr>
<th>Grade</th>
<th>Score (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>93.00 ≤ x ≤ 100.0</td>
</tr>
<tr>
<td>A−</td>
<td>90.00 ≤ x &lt; 93.00</td>
</tr>
<tr>
<td>B+</td>
<td>87.00 ≤ x &lt; 90.00</td>
</tr>
<tr>
<td>B</td>
<td>83.00 ≤ x &lt; 87.00</td>
</tr>
<tr>
<td>B−</td>
<td>80.00 ≤ x &lt; 83.00</td>
</tr>
<tr>
<td>C+</td>
<td>77.00 ≤ x &lt; 80.00</td>
</tr>
<tr>
<td>C</td>
<td>70.00 ≤ x &lt; 77.00</td>
</tr>
<tr>
<td>D</td>
<td>60.00 ≤ x &lt; 70.00</td>
</tr>
<tr>
<td>F</td>
<td>x &lt; 60.00</td>
</tr>
</tbody>
</table>

NOTE: Grades are NOT rounded up. For example, a final course score of 59.99% will result in a failing grade.
## Course Calendar

<table>
<thead>
<tr>
<th>Wk</th>
<th>Date</th>
<th>Lecture Topic</th>
<th>Assigned Reading* (refer to pages 1 &amp; 5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>AUG 20</td>
<td>Introduction, origin of evidence, CSI &amp; criminalistics, and the scene as recording media</td>
<td>Inman &amp; Rudin (Origin of Evidence); De Forest (CSI); Ristenbatt (documentation files)</td>
</tr>
<tr>
<td>02</td>
<td>AUG 27</td>
<td>Crime scene management, quality issues, and search techniques; Evidence collection and packaging</td>
<td>Crispino et al. (2011); Kirk (1947)</td>
</tr>
<tr>
<td>03</td>
<td>SEP 03</td>
<td>LABOR DAY — NO LECTURE</td>
<td></td>
</tr>
<tr>
<td>04</td>
<td>SEP 10</td>
<td>QUIZ — Science, pseudoscience, scientific method, integrity, ethics, and bias</td>
<td>Codes of Ethics/Professional Conduct (AAFS, ABC, ASCLD, CAC, IAI, NCFS, USDA)</td>
</tr>
<tr>
<td>05</td>
<td>SEP 17</td>
<td>Non-destructive enhancement and documentation techniques</td>
<td>NFSTC (CSI: A Guide for Law Enforcement)</td>
</tr>
<tr>
<td>06</td>
<td>SEP 24</td>
<td>Firearms (basic knowledge, preliminary examination, and gunshot residue)</td>
<td>Mozayani &amp; Fisher (ch. 8)</td>
</tr>
<tr>
<td>07</td>
<td>OCT 01</td>
<td>Pattern evidence (fingerprints, footwear, tires, etc.)</td>
<td>Mozayani &amp; Fisher (ch. 3); US DOJ NIJ (Fingerprint Sourcebook (ch. 2, 7, 8, 10))</td>
</tr>
<tr>
<td>08</td>
<td>OCT 08</td>
<td>MIDTERM EXAMINATION #1</td>
<td>Mozayani &amp; Fisher (ch. 4, 7)</td>
</tr>
<tr>
<td>09</td>
<td>OCT 15</td>
<td>Trace evidence (hair, fibers, glass, paint, soil, etc.)</td>
<td>Biological Evidence Preservation Handbook (p. 9-24)</td>
</tr>
<tr>
<td>10</td>
<td>OCT 22</td>
<td>Biological evidence (blood, semen, saliva, etc.) Entomological considerations</td>
<td>TWGFEX (Fire and Arson Scene Evidence); US DOJ NIJ (Electronic CSI (p. 1-22))</td>
</tr>
<tr>
<td>11</td>
<td>OCT 29</td>
<td>Fires and explosions Digital and electronic evidence</td>
<td>Mozayani &amp; Fisher (ch. 12-13)</td>
</tr>
<tr>
<td>12</td>
<td>NOV 05</td>
<td>MIDTERM EXAMINATION #2</td>
<td>Chisum &amp; Turvey (Preface to the First Edition, Preface, and ch. 1)</td>
</tr>
<tr>
<td>13</td>
<td>NOV 12</td>
<td>Sexual assault, questioned documents Drugs and alcohol</td>
<td>Mozayani &amp; Fisher (ch. 5, 9-11); Chisum &amp; Turvey (ch. 3-4); Ristenbatt (communication file)</td>
</tr>
<tr>
<td>14</td>
<td>NOV 19</td>
<td>THANKSGIVING RECESS — NO LECTURE</td>
<td>Chisum &amp; Turvey (ch. 6, 18-20)</td>
</tr>
<tr>
<td>15</td>
<td>NOV 26</td>
<td>Communication of results ETHICS DISCUSSION</td>
<td>Mozayani &amp; Fisher (ch. 15); Chisum &amp; Turvey (ch. 12); National Research Council (NRC) report (p. 177-179)</td>
</tr>
<tr>
<td>16</td>
<td>DEC 03</td>
<td>Crime scene/incident reconstruction Additional crime scene considerations</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>DEC 10-14</td>
<td>FINAL EXAMINATION (date/time TBA)</td>
<td></td>
</tr>
</tbody>
</table>

* Reading Assignments must be completed by date indicated; i.e., week 01 readings must be read before the first class meeting.
Additional Assigned References

Board of Directors. ABC rules of professional conduct (form 09-0001F v1.0.1). Palmetto (FL): American Board of Criminalistics (ABC); 2016 May.

Board of Directors. International Association for Identification code of ethics and standards of professional conduct. Hollywood (FL): International Association for Identification (IAI); 2011.


Ristenbatt 3rd, RR. Communication of results: reports, testimony, and release of preliminary information.

Ristenbatt 3rd, RR. Documentation: notes, sketches, and measurements.

Ristenbatt 3rd, RR. Forensic photography: outline of some critical concepts.

Ristenbatt 3rd, RR. Preservation of scene record (documentation).


## Course Objectives

<table>
<thead>
<tr>
<th>OBJECTIVES</th>
<th>STRATEGIES AND ASSESSMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehension of the techniques used to preserve the crime scene record (notes, sketches, and digital SLR photography).</td>
<td>• Lectures illustrating handwritten recording techniques and appropriate content&lt;br&gt;• Lectures and reading assignments covering fundamentals of photography and application to scene and evidence documentation&lt;br&gt;• Written examination questions to assess fundamental knowledge</td>
</tr>
<tr>
<td>Comprehension of the techniques used to recognize, enhance, document, collect, handle, and package physical evidence. Comprehension of importance of chain of custody and evidence integrity.</td>
<td>• Lectures outlining various search, recognition, enhancement, collection, handling, and packaging techniques&lt;br&gt;• Lectures illustrating science behind enhancement techniques&lt;br&gt;• Lectures discussing importance of chain of custody and evidence integrity&lt;br&gt;• Written examination questions to assess fundamental knowledge</td>
</tr>
<tr>
<td>Comprehension of common field tests for the presumptive identification and enhancement of different types of physical evidence.</td>
<td>• Lectures outlining common field tests for the presumptive identification and/or enhancement of biological evidence, fibers, gunshot residue, and impression evidence&lt;br&gt;• Lectures illustrating science behind field tests and enhancement techniques&lt;br&gt;• Written examination questions to assess fundamental knowledge</td>
</tr>
<tr>
<td>Comprehension of incident/crime reconstruction including basic blood trace analysis and projectile trajectory analysis.</td>
<td>• Lectures describing fundamentals of a scientific reconstruction&lt;br&gt;• Lectures illustrating science behind techniques including basic blood trace analysis and projectile trajectory analysis&lt;br&gt;• Written examination questions to assess fundamental knowledge</td>
</tr>
<tr>
<td>Comprehension of proper preparation and maintenance of case folders.</td>
<td>• Lectures describing fundamentals of documentation and use of forms and logs&lt;br&gt;• Written examination questions to assess fundamental knowledge</td>
</tr>
<tr>
<td>Comprehension of techniques to communicate results including verbal and written communication.</td>
<td>• Lectures describing communication of results; verbal and written</td>
</tr>
<tr>
<td>Comprehension of scene management techniques including allocation of personnel, resources, and time.</td>
<td>• Lectures illustrating aspects of scene management including allocation of personnel, resources, and available time (if time constraints)&lt;br&gt;• Students will be required to supervise at least one mock crime scene to demonstrate ability to manage personnel (classmates), available equipment, and time</td>
</tr>
<tr>
<td>Comprehension of importance of science and scientific, objective, critical thought processes in scene investigations.</td>
<td>• Lectures discussing science, scientific integrity, critical thinking and their importance during the investigation of a scene&lt;br&gt;• Written examination questions designed to assess critical thinking and problem-solving abilities</td>
</tr>
<tr>
<td>Comprehension of the role and impact of the criminalist in incident scene investigations.</td>
<td>• Lectures discussing role (responsibilities and duties) and importance of the criminalist in a scene investigation&lt;br&gt;• Written examination questions to assess fundamental knowledge</td>
</tr>
<tr>
<td>Introduction to codes of professional conduct and ethics for various forensic science professional organizations; comprehension of necessity of ethics in forensic science and potential ethical problems in forensic science including issues of professional practice, technical competence, and bias.</td>
<td>• Lecture discussing integrity, ethics, and bias in forensic science&lt;br&gt;• Reading ethical codes from various forensic science organizations&lt;br&gt;• Reading assignments that examine professional issues in forensic science including problems such as bias, professional practice, and technical competence&lt;br&gt;• Class discussion of reading assignments&lt;br&gt;• Discussion of 7-step approach to evaluation of ethical issues&lt;br&gt;• Discussion of case study using 7-step approach to evaluation of ethical issues</td>
</tr>
</tbody>
</table>
FRNSC 410

ACADEMIC INTEGRITY

All Penn State policies regarding ethics and honorable behavior apply to this course (refer to links below for policy statements). Academic integrity is the pursuit of scholarly activity free from fraud and deception and is an educational objective of this institution. All University policies regarding academic integrity apply to this course. Academic dishonesty includes, but is not limited to, cheating, plagiarizing, fabricating or altering information or citations, facilitating acts of academic dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor, or tampering with the academic record of another student. For any material or ideas obtained from other sources, such as the text or things you see on the web, in the library, etc., a source reference must be given. Direct quotes from any source must be identified as such. All examination answers must be your own, and you must not provide any assistance to other students during examinations. Any instances of academic dishonesty WILL be pursued under the University and Eberly College of Science regulations concerning academic integrity.

Discussion of course concepts and cooperative study are encouraged; however, collaboration, discussion, assistance, cheating, plagiarism, etc., are NOT permitted during examinations or other assignments as specified by the instructor. Integrity and ethics are considered exceptionally important by the instructor.

CODE OF MUTUAL RESPECT

The Code of Mutual Respect and Cooperation was developed to embody the values that we hope our faculty, staff, and students possess, consistent with the aspirational goals expressed in the Penn State Principles. The University is strongly committed to freedom of expression, and consequently, the Code does not constitute University or College policy, and is not intended to interfere in any way with an individual's academic or personal freedoms. We hope, however, that individuals will voluntarily endorse the 12 principles set forth in the Code, thereby helping us make the Eberly College of Science a place where every individual feels respected and valued, as well as challenged and rewarded.

DISABILITY ACCOMMODATIONS

Penn State welcomes students with disabilities into the University's educational programs. Every Penn State campus has an office for students with disabilities. Student Disability Resources (SDR) Web site provides contact information for every Penn State campus: http://equity.psu.edu/sdr/disability-coordinator. For further information, please visit Student Disability Resources Web site: http://equity.psu.edu/sdr.

In order to receive consideration for reasonable accommodations, you must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation: http://equity.psu.edu/sdr/guidelines. If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with an accommodation letter. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. You must follow this process for every semester that you request accommodations.

COUNSELING AND PSYCHOLOGICAL SERVICES

Many students at Penn State face personal challenges or have psychological needs that may interfere with their academic progress, social development, or emotional wellbeing. The university offers a variety of confidential services to help you through difficult times, including individual and group counseling, crisis intervention, consultations, online chats, and mental health screenings. These services are provided by staff who welcome all students and embrace a philosophy respectful of clients' cultural and religious backgrounds, and sensitive to differences in race, ability, gender identity, and sexual orientation.

Counseling and Psychological Services at University Park:
- +1-814-863-0395 http://studentaffairs.psu.edu/counseling/
- Penn State Crisis Line (24 hours/7 days/week): +1-877-229-6400
- Crisis Text Line (24 hours/7 days/week): Text LIONS to 741741

EDUCATIONAL EQUITY AND BIAS REPORTING

Penn State takes great pride to foster a diverse and inclusive environment for students, faculty, and staff. Acts of intolerance, discrimination, or harassment due to age, ancestry, color, disability, gender, gender identity, national origin, race, religious belief, sexual orientation, or veteran status are not tolerated and can be reported through Educational Equity via the Report Bias webpage (http://equity.psu.edu/reportbias).

MANDATED REPORTING (TITLE IX)

Penn State's policies require faculty to share information about incidents of sex-based discrimination and harassment (discrimination, harassment, sexual harassment, sexual misconduct, dating violence, domestic violence, stalking, and retaliation) with Penn State's Title IX coordinator or deputy coordinators, regardless of whether the incidents are stated in person or shared by students as part of their coursework. For more information regarding the University's policies and procedures for responding to reports of sexual or gender-based harassment or misconduct, please visit http://titleix.psu.edu. Additionally, faculty members are required to report on any reasonable suspicion of child abuse in accordance with the Pennsylvania Child Protective Services Law.
Q & A

Frequently asked questions (FAQ’s)

Why is science important in forensic science and criminalistics?

Virtually any individual can be trained to perform routine laboratory and field work. Thorough comprehension of the underlying scientific knowledge differentiates a criminalist (scientist) from a technician or investigator. Written examinations and problem sets are designed to assess critical thought processes and fundamental knowledge.

Will there be a “curve” at the end of the course?

NO! However, if the class mean (final score) is less than 75.00%, a constant may be added to every student’s final score. This possibility, and its magnitude, will remain unknown until after all methods of assessment have been received and graded at the end of the semester.

How stringent is the course attendance policy? Why is attendance monitored?

Very! Attendance will be taken within the first five (5) minutes of the lecture. It is the student’s responsibility to inform the instructor in advance of any session that will be missed due to predictable circumstances. In the event of an unexpected emergency, inform the instructor ASAP.

The course is intensive. Excessive absences from lectures will negatively influence the ability to complete required assignments and will ultimately hinder comprehension of the subject matter.

What is the instructor’s philosophy regarding this course?

The instructor believes that students must accept more responsibility in their education. When individuals are forced to solve problems on their own, critical thought processes are promoted and the educational process is enhanced. Students will be expected to:

• Remain attentive during lectures
• Utilize information from FRNSC 210 and locate additional information, if needed
• Be self-reliant, inquisitive, and enthusiastic
• Recall basic scientific and mathematical knowledge

Students are cautioned against seeking guidance from classmates; all important questions should be directed to the instructor without hesitation. Students are strongly encouraged to verify procedures and proper equipment usage with the instructor prior to use.

Can the instructor offer additional advice?

• Take this course seriously! It is an intense, challenging experience that requires considerable effort.
• Be familiar with basic concepts of algebra, geometry, general chemistry, general physics, and basic statistics. Written examinations will include questions that are designed to assess your ability to solve problems using many of the aforementioned concepts.
• Complete each problem set and discuss all difficulties with the instructor.
• Complete the required reading assignments by the specified dates.
• Keep abreast of the material and avoid “cramming” for examinations. Procrastination may produce obstructions along the path toward the achievement of a desirable grade.
• If you are experiencing any problems during the semester, contact the instructor immediately. Delay will likely lead to undesirable and possibly irreversible circumstances.